



Sequence Listing

<110> Adams, Sean  
Pan, James  
Zhong, Alan

<120> UCP4

<130> P1626R1

<140> US 09/397,342

<141> 1999-09-15

<150> US 60/101,279

<151> 1998-09-22

<150> US 60/114,223

<151> 1998-12-30

<150> US 60/129,674

<151> 1999-04-16

<160> 18

<210> 1

<211> 323

<212> PRT

<213> Homo sapiens

<400> 1

Met Ser Val Pro Glu Glu Glu Arg Leu Leu Pro Leu Thr Gln  
1 5 10 15

Arg Trp Pro Arg Ala Ser Lys Phe Leu Leu Ser Gly Cys Ala Ala  
20 25 30

Thr Val Ala Glu Leu Ala Thr Phe Pro Leu Asp Leu Thr Lys Thr  
35 40 45

Arg Leu Gln Met Gln Gly Glu Ala Ala Leu Ala Arg Leu Gly Asp  
50 55 60

Gly Ala Arg Glu Ser Ala Pro Tyr Arg Gly Met Val Arg Thr Ala  
65 70 75

Leu Gly Ile Ile Glu Glu Glu Gly Phe Leu Lys Leu Trp Gln Gly  
80 85 90

Val Thr Pro Ala Ile Tyr Arg His Val Val Tyr Ser Gly Gly Arg  
95 100 105

Met Val Thr Tyr Glu His Leu Arg Glu Val Val Phe Gly Lys Ser	110	115	120
Glu Asp Glu His Tyr Pro Leu Trp Lys Ser Val Ile Gly Gly Met	125	130	135
Met Ala Gly Val Ile Gly Gln Phe Leu Ala Asn Pro Thr Asp Leu	140	145	150
Val Lys Val Gln Met Gln Met Glu Gly Lys Arg Lys Leu Glu Gly	155	160	165
Lys Pro Leu Arg Phe Arg Gly Val His His Ala Phe Ala Lys Ile	170	175	180
Leu Ala Glu Gly Gly Ile Arg Gly Leu Trp Ala Gly Trp Val Pro	185	190	195
Asn Ile Gln Arg Ala Ala Leu Val Asn Met Gly Asp Leu Thr Thr	200	205	210
Tyr Asp Thr Val Lys His Tyr Leu Val Leu Asn Thr Pro Leu Glu	215	220	225
Asp Asn Ile Met Thr His Gly Leu Ser Ser Leu Cys Ser Gly Leu	230	235	240
Val Ala Ser Ile Leu Gly Thr Pro Ala Asp Val Ile Lys Ser Arg	245	250	255
Ile Met Asn Gln Pro Arg Asp Lys Gln Gly Arg Gly Leu Leu Tyr	260	265	270
Lys Ser Ser Thr Asp Cys Leu Ile Gln Ala Val Gln Gly Glu Gly	275	280	285
Phe Met Ser Leu Tyr Lys Gly Phe Leu Pro Ser Trp Leu Arg Met	290	295	300
Thr Pro Trp Ser Met Val Phe Trp Leu Thr Tyr Glu Lys Ile Arg	305	310	315
Glu Met Ser Gly Val Ser Pro Phe	320	323	

<210> 2  
 <211> 1039  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 2

ccgagctcgg atcccgttat cgtcttgccg tactgctgaa tgtccgtccc 50  
 ggaggaggag gagaggcttt tgccgctgac ccagagatgg ccccgagcga 100  
 gcaaattcct actgtccggc tgcgcggcta ccgtggccga gctagcaacc 150  
 tttcccctgg atctcacaaa aactcgactc caaatgcaag gagaagcagc 200  
 tcttgctcgg ttgggagacg gtgcaagaga atctgcccc tataggggaa 250  
 tgggtgcgcac agccctaggg atcattgaag aggaaggctt tctaaagctt 300  
 tggcaaggag tgacaccgc catttacaga cacgtagtgt attctggagg 350  
 tcgaatggtc acatatgaac atctccgaga ggttggtgtt ggcaaaagtg 400  
 aagatgagca ttatcccctt tggaaatcag tcattggagg gatgatggct 450  
 ggtgttattg gccagttttt agccaatcca actgacctag tgaaggttca 500  
 gatgcaaagt gaaggaaaaa ggaaactgga aggaaaacca ttgcgatttc 550  
 gtggtgtaca tcatgcattt gcaaaaatct tagctgaagg aggaatacga 600  
 gggctttggg caggctgggt acccaatata caaagagcag cactggtgaa 650  
 tatgggagat ttaaccaett atgatacagt gaaacactac ttggtattga 700  
 atacaccact tgaggacaat atcatgactc acggtttatt aagtttatgt 750  
 tctggactgg tagcttctat tctgggaaca ccagccgatg tcatcaaaag 800  
 cagaataatg aatcaaccac gagataaaca aggaagggga cttttgtata 850  
 aatcatcgac tgactgcttg attcaggctg ttcaagggtga aggattcatg 900  
 agtctatata aaggcttttt accatcttgg ctgagaatga ccccttggtc 950  
 aatggtgttc tggcttactt atgaaaaaat cagagagatg agtggagtca 1000  
 gtccatttta agaattctgc agatatccat cacactggc 1039

<210> 3

<211> 31

<212> DNA

<213> Artificial

<220>

<221> Misc-feature

<222> 1-31

<223> Sequence is synthesized

<400> 3

cgcggatccc gttatcgtct tgcgctactg c 31

<210> 4

<211> 34

<212> DNA

<213> Artificial

<220>

<221> Misc-feature

<222> 1-34

<223> Sequence is synthesized

<400> 4

gcggaattct taaaatggac tgactccact catc 34

<210> 5

<211> 1248

<212> DNA

<213> Artificial

<220>

<221> Misc-feature

<222> 1-1248

<223> Sequence is synthesized

<220>

<221> unknown

<222> 1231

<223> unknown base

<400> 5

cgttatcgtc ttgcgctact gctgaatgtc cgtcccgag gaggaggaga 50  
ggcttttggc gctgaccag agatggcccc gagcgagcaa attcctactg 100  
tccggtgcg cggctaccgt ggccgagcta gcaacctttc cctggatct 150  
cacaaaaact cgactccaaa tgcaaggaga agcagctctt gtcggttgg 200  
gagacggtgc aagagaatct gccccctata ggggaatggt gcgcacagcc 250  
ctagggatca ttgaagagga aggctttcta aagctttggc aaggagtgc 300  
accgccatt tacagacag tagttatttc tggaggtcga atggtcacat 350  
atgaacatct ccgagagggt gtgtttggca aaagtgaaga tgagcattat 400  
cccccttggg aatcagtcac tggagggatg atggctggtg ttattggcca 450

gtttttagcc aatccaactg acctagttaa ggttcagatg caaatggaag 500  
 gaaaaaggaa actggaagga aaaccattgc gatttcgtgg tgtacatcat 550  
 gcatttgcaa aaatcttagc tgaaggagga atacgaaggc tttgggcagg 600  
 ctgggtaccc aatatacaaa gagcagcact ggtgaatatg ggagatttaa 650  
 ccacttatga tacagtgaaa cactacttgg tattgaatac accacttgag 700  
 gacaatatca tgactcacgg tttatcaagt ttatgttctg gactggtagc 750  
 ttctattctg ggaacaccag ccgatgtcat caaaagcaga ataataatc 800  
 aaccacgaga taaacaagga aggggacttt tgtataaatc atcgactgac 850  
 tgcttgattc aggctgttca aggtgaagga ttcattgagtc tatataaagg 900  
 ctttttacca tcttggtgga gaatgacccc ttggtcaatg gtgttctggc 950  
 ttacttatga aaaaatcaga gagatgagtg gagtcagtcc attttaaacc 1000  
 cctaaagatg caacccttaa agatacagtg ttcagtatta ttgaaatatg 1050  
 ggcatctgca acacataccc cctattatct ctacctcttt aggaagacac 1100  
 ctattccaca gagactgatt tatagggggc agcactttat ttttttctgg 1150  
 aaaccaagt tctctttgac tcctcttttt gtccaaaagt gatctggctg 1200  
 gatctcaca ggccatccaa tgagaccccg nacagcattt tctaaaga 1248

<210> 6  
 <211> 58  
 <212> DNA  
 <213> Artificial

<220>  
 <221> Misc-feature  
 <222> 1-58  
 <223> Sequence is synthesized

<400> 6  
 cgcgatccg aatggacta caaggacgac gatgacaagt ccgtcccga 50  
 ggaggagg 58

<210> 7  
 <211> 35  
 <212> DNA  
 <213> Artificial

<220>  
<221> Misc-feature  
<222> 1-35  
<223> Sequence is synthesized  
  
<400> 7  
gcgaagcttg ccatggttgg actgaagcct tcaga 35

<210> 8  
<211> 33  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-33  
<223> Sequence is synthesized

<400> 8  
cgcgattct caaaacggtg attcccgtaa cat 33

<210> 9  
<211> 61  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-61  
<223> Sequence is synthesized

<400> 9  
gcgaagcttg ccatggacta caaggacgac gatgacaagg ttggactgaa 50  
  
gccttcagac g 61

<210> 10  
<211> 19  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-19  
<223> Sequence is synthesized

<400> 10  
aatgcctatc gccgaggag 19

<210> 11

<211> 20  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-20  
<223> Sequence is synthesized

<400> 11  
gtaggaactt gtcgtccgg 20

<210> 12  
<211> 22  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-22  
<223> Sequence is synthesized

<400> 12  
tgctcgcgct cacgcagaga tg 22

<210> 13  
<211> 24  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-24  
<223> Sequence is synthesized

<400> 13  
gaaatcgtgc gtgacatcaa agag 24

<210> 14  
<211> 23  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-23  
<223> Sequence is synthesized

<400> 14  
ctccttctgc atcctgtcag caa 23

<210> 15  
<211> 22  
<212> DNA  
<213> Artificial

<220>  
<221> Misc-feature  
<222> 1-22  
<223> Sequence is synthesized

<400> 15  
cggttccgat gccctgaggc tc 22

<210> 16  
<211> 307  
<212> PRT  
<213> Homo sapiens

<400> 16  
Met Gly Gly Leu Thr Ala Ser Asp Val His Pro Thr Leu Gly Val  
1 5 10 15  
Gln Leu Phe Ser Ala Pro Ile Ala Ala Cys Leu Ala Asp Val Ile  
20 25 30  
Thr Phe Pro Leu Asp Thr Ala Lys Val Arg Leu Gln Val Gln Gly  
35 40 45  
Glu Cys Pro Thr Ser Ser Val Ile Arg Tyr Lys Gly Val Leu Gly  
50 55 60  
Thr Ile Thr Ala Val Val Lys Thr Glu Gly Arg Met Lys Leu Tyr  
65 70 75  
Ser Gly Leu Pro Ala Gly Leu Gln Arg Gln Ile Ser Ser Ala Ser  
80 85 90  
Leu Arg Ile Gly Leu Tyr Asp Thr Val Gln Glu Phe Leu Thr Ala  
95 100 105  
Gly Lys Glu Thr Ala Pro Ser Leu Gly Ser Lys Ile Leu Ala Gly  
110 115 120  
Leu Thr Thr Gly Gly Val Ala Val Phe Ile Gly Gln Pro Thr Glu  
125 130 135  
Val Val Lys Val Arg Leu Gln Ala Gln Ser His Leu His Gly Ile  
140 145 150  
Lys Pro Arg Tyr Thr Gly Thr Tyr Asn Ala Tyr Arg Ile Ile Ala  
155 160 165



Thr	Thr	Glu	Gly	Leu	Thr	Gly	Leu	Trp	Lys	Gly	Thr	Thr	Pro	Asn	
				170					175					180	
Leu	Met	Arg	Ser	Val	Ile	Ile	Asn	Cys	Thr	Glu	Leu	Val	Thr	Tyr	
				185					190					195	
Asp	Leu	Met	Lys	Glu	Ala	Phe	Val	Lys	Asn	Asn	Ile	Leu	Ala	Asp	
				200					205					210	
Asp	Val	Pro	Cys	His	Leu	Val	Ser	Ala	Leu	Ile	Ala	Gly	Phe	Cys	
				215					220					225	
Ala	Thr	Ala	Met	Ser	Ser	Pro	Val	Asp	Val	Val	Lys	Thr	Arg	Phe	
				230					235					240	
Ile	Asn	Ser	Pro	Pro	Gly	Gln	Tyr	Lys	Ser	Val	Pro	Asn	Cys	Ala	
				245					250					255	
Met	Lys	Val	Phe	Thr	Asn	Glu	Gly	Pro	Thr	Ala	Phe	Phe	Lys	Gly	
				260					265					270	
Leu	Val	Pro	Ser	Phe	Leu	Arg	Leu	Gly	Ser	Trp	Asn	Val	Ile	Met	
				275					280					285	
Phe	Val	Cys	Phe	Glu	Gln	Leu	Lys	Arg	Glu	Leu	Ser	Lys	Ser	Arg	
				290					295					300	
Gln	Thr	Met	Asp	Cys	Ala	Thr									
				305		307									

<210> 17  
 <211> 309  
 <212> PRT  
 <213> Homo sapiens

<400> 17

Met	Val	Gly	Phe	Lys	Ala	Thr	Asp	Val	Pro	Pro	Thr	Ala	Thr	Val	
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Lys	Phe	Leu	Gly	Ala	Gly	Thr	Ala	Ala	Cys	Ile	Ala	Asp	Leu	Ile	
				20					25					30	
Thr	Phe	Pro	Leu	Asp	Thr	Ala	Lys	Val	Arg	Leu	Gln	Ile	Gln	Gly	
				35					40					45	
Glu	Ser	Gln	Gly	Pro	Val	Arg	Ala	Thr	Val	Ser	Ala	Gln	Tyr	Arg	
				50					55					60	
Gly	Val	Met	Gly	Thr	Ile	Leu	Thr	Met	Val	Arg	Thr	Glu	Gly	Pro	
				65					70					75	

Arg	Ser	Leu	Tyr	Asn	Gly	Leu	Val	Ala	Gly	Leu	Gln	Arg	Gln	Met	80	85	90
Ser	Phe	Ala	Ser	Val	Arg	Ile	Gly	Leu	Tyr	Asp	Ser	Val	Lys	Gln	95	100	105
Phe	Tyr	Thr	Lys	Gly	Ser	Glu	His	Ala	Ser	Ile	Gly	Ser	Arg	Leu	110	115	120
Leu	Ala	Gly	Ser	Thr	Thr	Gly	Ala	Leu	Ala	Val	Ala	Val	Ala	Gln	125	130	135
Pro	Thr	Asp	Val	Val	Lys	Val	Arg	Phe	Gln	Ala	Gln	Ala	Arg	Ala	140	145	150
Gly	Gly	Gly	Arg	Arg	Tyr	Gln	Ser	Thr	Val	Asn	Ala	Tyr	Lys	Thr	155	160	165
Ile	Ala	Arg	Glu	Glu	Gly	Phe	Arg	Gly	Leu	Trp	Lys	Gly	Thr	Ser	170	175	180
Pro	Asn	Val	Ala	Arg	Asn	Ala	Ile	Val	Asn	Cys	Ala	Glu	Leu	Val	185	190	195
Thr	Tyr	Asp	Leu	Ile	Lys	Asp	Ala	Leu	Leu	Lys	Ala	Asn	Leu	Met	200	205	210
Thr	Asp	Asp	Leu	Pro	Cys	His	Phe	Thr	Ser	Ala	Phe	Gly	Ala	Gly	215	220	225
Phe	Cys	Thr	Thr	Val	Ile	Ala	Ser	Pro	Val	Asp	Val	Val	Lys	Thr	230	235	240
Arg	Tyr	Met	Asn	Ser	Ala	Leu	Gly	Gln	Tyr	Ser	Ser	Ala	Gly	His	245	250	255
Cys	Ala	Leu	Thr	Met	Leu	Gln	Lys	Glu	Gly	Pro	Arg	Ala	Phe	Tyr	260	265	270
Lys	Gly	Phe	Met	Pro	Ser	Phe	Leu	Arg	Leu	Gly	Ser	Trp	Asn	Val	275	280	285
Val	Met	Phe	Val	Thr	Tyr	Glu	Gln	Leu	Lys	Arg	Ala	Leu	Met	Ala	290	295	300
Ala	Cys	Thr	Ser	Arg	Glu	Ala	Pro	Phe							305	309	

<210> 18

<211> 300

<212> PRT

<213> Homo sapiens

<400> 18

Met	Ala	Val	Lys	Phe	Leu	Gly	Ala	Gly	Thr	Ala	Ala	Cys	Phe	Ala	
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Asp	Leu	Val	Thr	Phe	Pro	Leu	Asp	Thr	Ala	Lys	Val	Arg	Leu	Gln	
				20					25					30	
Ile	Gln	Gly	Glu	Asn	Gln	Ala	Val	Gln	Thr	Ala	Arg	Leu	Val	Gln	
				35					40					45	
Tyr	Arg	Gly	Val	Leu	Gly	Thr	Ile	Leu	Thr	Met	Val	Arg	Thr	Glu	
				50					55					60	
Gly	Pro	Cys	Ser	Pro	Tyr	Asn	Gly	Leu	Val	Ala	Gly	Leu	Gln	Arg	
				65					70					75	
Gln	Met	Ser	Phe	Ala	Ser	Ile	Arg	Ile	Gly	Leu	Tyr	Asp	Ser	Val	
				80					85					90	
Lys	Gln	Val	Tyr	Thr	Pro	Lys	Gly	Ala	Asp	Asn	Ser	Ser	Leu	Thr	
				95					100					105	
Thr	Arg	Ile	Leu	Ala	Gly	Cys	Thr	Thr	Gly	Ala	Met	Ala	Val	Thr	
				110					115					120	
Cys	Ala	Gln	Pro	Thr	Asp	Val	Val	Lys	Val	Arg	Phe	Gln	Ala	Ser	
				125					130					135	
Ile	His	Leu	Gly	Pro	Ser	Arg	Ser	Asp	Arg	Lys	Tyr	Ser	Gly	Thr	
				140					145					150	
Met	Asp	Ala	Tyr	Arg	Thr	Ile	Ala	Arg	Glu	Glu	Gly	Val	Arg	Gly	
				155					160					165	
Leu	Trp	Lys	Gly	Thr	Leu	Pro	Asn	Ile	Met	Arg	Asn	Ala	Ile	Val	
				170					175					180	
Asn	Cys	Ala	Glu	Val	Val	Thr	Tyr	Asp	Ile	Leu	Lys	Glu	Lys	Leu	
				185					190					195	
Leu	Asp	Tyr	His	Leu	Leu	Thr	Asp	Asn	Phe	Pro	Cys	His	Phe	Val	
				200					205					210	
Ser	Ala	Phe	Gly	Ala	Gly	Phe	Cys	Ala	Thr	Val	Val	Ala	Ser	Pro	
				215					220					225	
Val	Asp	Val	Val	Lys	Thr	Arg	Tyr	Met	Asn	Ser	Pro	Pro	Gly	Gln	
				230					235					240	

Tyr Phe Ser Pro Leu Asp Cys Met Ile Lys Met Val Ala Gln Glu  
245 250 255

Gly Pro Thr Ala Phe Tyr Lys Gly Phe Thr Pro Ser Phe Leu Arg  
260 265 270

Leu Gly Ser Trp Asn Val Val Met Phe Val Thr Tyr Glu Gln Leu  
275 280 285

Lys Arg Ala Leu Met Lys Val Gln Met Leu Arg Glu Ser Pro Phe  
290 295 300